



THE INTERMEC®

GUIDE TO

DATA CAPTURE

TECHNOLOGIES

 **Intermec**



The Right Technology for the Application



The world of data capture has become more complex in recent years. Gone are the days when one technology or symbology was all an enterprise needed to meet its data capture needs. Advances like new linear and 2D symbologies as well as RFID (radio frequency identification) have brought powerful changes to how data is captured and used.

Today, companies need suites of data capture technologies designed to best meet the various applications found within the enterprise. It's not that one technology is better than another; companies must decide what the optimum suite of technologies is to best serve its needs.

This guide is an overview of data technologies and their best uses within a variety of applications. It's based on Intermec's years of experience delivering data capture solutions to virtually every industry and the best practices it has gained with its customers.



Data Capture Technologies in Manufacturing and Warehouse Operations

Manufacturing and warehouse operations require a wide range of rugged data collection devices and wireless networks designed to withstand harsh, dusty environments and extreme temperatures. RFID eliminates labor-intensive hand scanning of pallets and cartons being received, while a combination of linear and area imagers plus long-range laser scanners keep inventory management and work-in-progress moving.



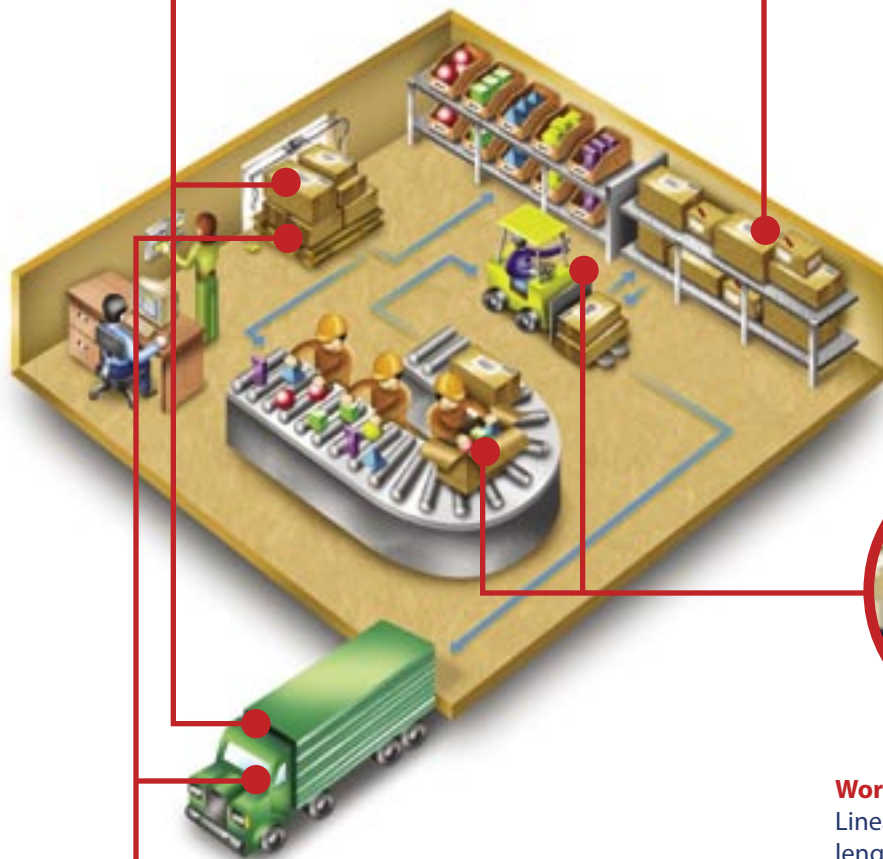
Receiving pallets:

RFID tags on pallets and cartons can be read automatically as they pass through warehouse and distribution center doors using fixed RFID readers with an antenna array around the dock door, eliminating the labor associated with hand scanning each item.



Long-range scanning:

Long-range laser scanners are best for scanning high shelf and carton labels, allowing workers to scan up to 35 feet with a sharp scanning beam, eliminating the need to climb ladders or step off a forklift to scan labels.



Work in progress and inventory management:

Linear imaging is the best technology for arms length scanning (up to 20 inches) during work in progress and inventory management. It's superior for reading bar codes that have been damaged during storage, retrieval, or transit. Laser scanners are a better choice for scanning outdoors in bright light because of their bright, coherent scanning beam. Cordless scanners incorporating wireless personal area network technology used with vehicle-mounted computers provide tether-free scanning for better flexibility and safety.



Receiving or shipping boxes via 3PL companies:

Area imagers are capable of reading the 2D symbology commonly used by 3PL shippers like UPS and FedEx, and provide short-range, omni-directional reading of linear bar codes, reducing the package handling needed to realign bar codes for scanning.

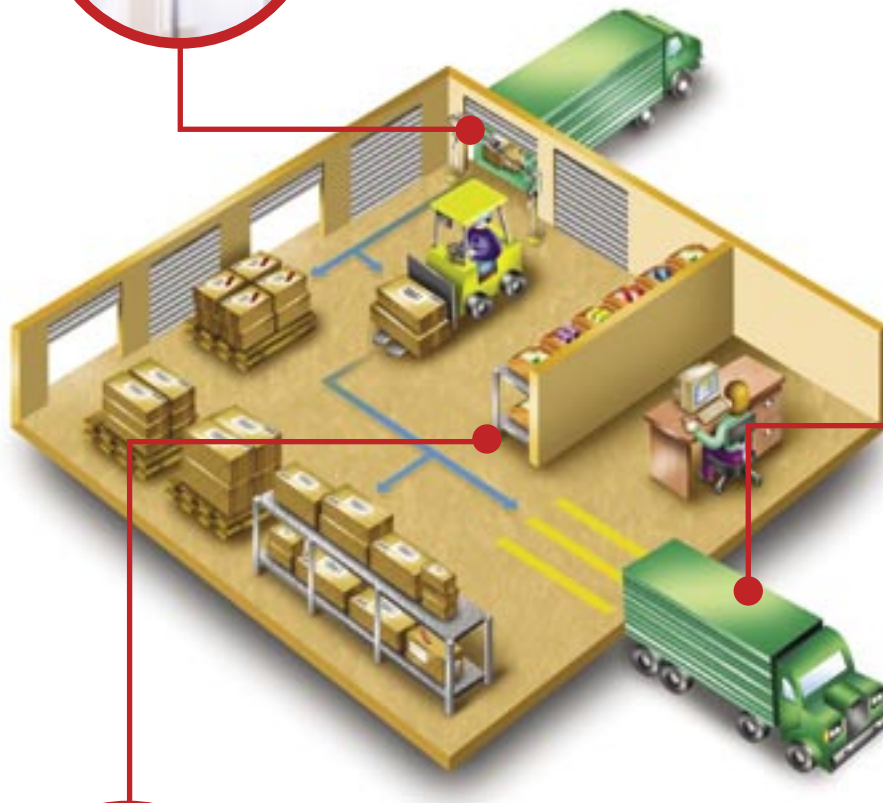
Data Capture Technologies in Distribution & Logistics

Distribution & logistics operations rely on fast and accurate collection and sharing of data to keep goods moving quickly. RFID technology feeding data directly into host systems helps speed cross-dock operations while handheld, wireless linear and area imagers can handle individual carton scanning and exception management.



Cross Docking:

By placing RFID reader portals around dock doors, RFID tags on pallets and cartons are read automatically. Instructions are immediately relayed to the forklift driver via a wireless vehicle mounted computer as to which dock door to deliver the pallet to complete the cross docking transfer. Downtime and misplacement of goods are eliminated.



Pick up and delivery:

Area imagers are capable of reading the 2D symbology commonly used by 3PL shippers and provide short-range linear bar code scanning capabilities as well. Linear imagers are better for high-volume linear bar code scanning.



Order picking:

Linear imaging is the best technology for arms length scanning during order picking. Linear imagers can quickly read even poorly printed or damaged bar codes, speeding the picking process.

Data Capture Technologies in Retail

Retail demands low-cost, durable fixed and mobile POS (point of service) scanners as well as wireless handheld computers with built-in imagers to meet the increasing demands of store operations. RFID technology is in retail pilot programs today and will play an increasingly important role in pallet and carton management over the next few years. For example, Metro AG is using RFID to automate many of the tasks it previously performed manually, allowing it to spend less time and money on administration and more time on providing products to the customer.



Storeroom:

Linear imagers, with their fast scan rates and ability to read damaged and poor quality bar codes, are ideal for virtually all storeroom inventory control. Area imagers may be needed if the store is receiving cartons from a 3PL shipper. Long-range laser scanners would be required for shelf and carton labels placed over 19 inches away.



Automatic Inventory Updates:

In RFID pilot programs, RFID portal readers are placed around the door from the stockroom to the store floor, automatically reading case tags as they're carried into the store and adjusting inventory in real time.



Point of Service:

Linear imagers in fixed POS stations enable store associates to quickly finalize sales, even when scanning poor quality bar codes. In a handheld computer, linear imagers allow associates to provide better service and perform line-busting mobile point-of-sale operations.



Shelf/Display Management & Price Validation:

Linear imagers in wireless handheld computers combine the ideal scanning technology with the ability to access product and planogram information in real time, improving customer service and shelf management.

Additional Elements of a Successful Data Capture System

In addition to implementing the best technology for a given application, there are other elements that can help maximize the value of your data capture system. These include:

- **Needs assessment** — Conducting a needs assessment, either on your own or with the help of a knowledgeable professional services consultant, is the best way to ensure that you've identified the specific needs and particular issues to solve before you start the selection and purchase process.
- **Site surveys** — Every work environment has its own peculiar traits. An experienced professional services team can identify any special requirements your system will need to be successful—especially if it will include any radio frequency equipment, like wireless networks and RFID.
- **Wireless technology** — Wireless local area networks (WLAN) allow data capture devices to be truly mobile and enable systems to always have the most up-to-date information. Personal area networks cut the cord between devices allowing workers greater mobility and removing a significant cause of worker injuries and device failures.
- **Software** — Depending on your application, additional software or middleware may be required. Look to your systems integrator, professional services consultant, or your hardware vendor to help find the ideal software components that will seamlessly integrate with the data capture equipment and your host system.
- **Training** — End users are as good as the training they receive. Any new system rollout should include training for everyone who is affected by it (e.g. floor workers, administrative staff, vendors, etc.).

The Best Suite of Interoperable Technologies

Choosing the right combination of data capture technologies requires rigorous needs assessment as well as technology and vendor evaluation. Implementing a suite of technologies should be as easy as installing a single technology, so choosing a vendor who can ensure interoperability is crucial.

Intermec Technologies offers products using virtually every data capture technology available, a balanced appraisal as to which technologies to use, and, because it's all from one company, easy installation and interoperability. Additionally, its maintenance, service, training, site surveys, and key alliances provide support and customization for any application or environment.

With over 900 patents, Intermec has one of the largest patent portfolios in the industry, including over 28% of the patents for data capture technology. And through its four decades of delivering standards-based products, it has produced a series of industry "firsts" that have helped bring to market better and more cost-effective solutions to its customers.

For more information, visit Intermec's Web site or call 1-800-934-3163 (toll-free US & Canada) or (425) 348-2726.

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